FORM PTO-1449

INFORMATION DISCLOSURE CITATION

Atty Docket | Serial No. | LU 6144 (US) | 10/539,242 | Applicant

Shahram Mihan et al.

Filing Date Group Art Unit June 16, 2005 1796

U.S. PATENT DOCUMENTS Examiner Document Sub-Filing Issue Date Name Class Class Date Initial Number 3,125,547 03/17/64 Blatz AAAB 5,227,440 07/13/93 Canich et al. 09/21/93 Spenadel et al. 5,246,783 AC01/25/94 Jejelowo et al. AD 5,281,679 AE 04/29/97 Schiffino et al. 5,625,016 12/16/97 Govoni et al. AF 5,698,642 09/15/98 Herrmann et al. AG 5,808,122 05/29/01 Derrick et al. 6,240,507 AH 6,255,418 07/03/01 Jolly et al. ΑI Becke et al. 6,281,153 08/28/01 AJ 12/04/01 Wenzel AK 6,326,445 02/26/02 AL6,350,814 Bauer et al. 07/02/02 Govoni et al. AM 6,413,477 07/09/02 Bohnen AN 6,417,302 07/16/02 Kale et al. AO 6,420,507 08/20/02 Mihan et al. AP 6,437,161 6,589,905 07/08/03 Fischer et al. AQ 11/04/03 Kazakov et al. AR 6,642,313 03/02/04 Mihan et al. AS 6,699,948 6,737,130 05/18/04 AT Ferri 08/31/04 AU 6,784,261 Schopf et al. Mihan et al. ΑV 6,787,498 09/07/04 AW 6,812,185 11/02/04 Fischer et al. 01/04/05 Mihan et al. AX 6,838,563 AY 6,911,516 06/28/05 Mihan et al. 6,919,412 07/19/05 Mihan et al. AZAAA 6,924,248 08/02/05 Mihan et al. 7,045,644 05/16/06 Schopf et al. **AAB AAC** 7,053,160 05/30/06 Bingel et al. 7,094,724 08/22/06 Fraaije et al. AAD 07/03/07 Ewen et al. **AAE** 7,238,818

Date Considered

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Examiner

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U.S. PATENT DOCU	JMENTS
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Examiner Initial		Document Number	Issue Date	Name	Class	Sub- Class	Filing Date
	ВА	2003/0036658 (corresponds to US 6,699,948; US 6,919,412)	02/20/03	Mihan et al.			
	BB	2003/0036662 (corresponds to US 6,787,498; US 6,919,412)	02/20/03	Mihan et al.			
	ВС	2003/0055267 (corresponds to US 6,838,563; US 6,919,412)	03/20/03	Mihan et al.	_		
	BD	2003/0176275 (corresponds to US 7,094,724)	09/18/03	Fraaije et al.			
	BE	2003/0236164 (corresponds to US 6,812,185; US 6,588,905)	12/25/03	Fischer et al.			
	BF	2004/0242880	12/02/04	Mihan et al.			
	BG	2005/0282979	12/22/05	Mihan et al.			
	BH	2006/0116491	06/01/06	Mihan et al.			

FOREIGN PATENT DOCUMENTS

	Document Number	Date	Country	Class	Sub- Class	Trans- lation
BI	19710615 (corresponds to US 6,255,418)	09/17/98	DE			
BJ	19745047 (corresponds to US 6,350,814)	04/15/99	DE			
BK	100,843	02/22/84	EP			
BL	416,815	03/13/91	EP			
BM	420,436	04/03/91	EP			
BN	608,369	08/03/94	EP			
ВО	662,989	07/19/95	EP			
BP	728,160	08/28/96	EP			
BQ	742,046 (corresponds to US 5,808,122)	11/13/96	EP			
BR	899,278	03/03/99	EP			
BS	90/03414	04/05/90	WO			
BT	91/09882	07/11/91	WO			
BU	93/03093	02/18/93	WO			
BV	93/12151	06/24/93	WO			
BW	95/27005	10/12/95	WO			

Examiner

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	FOREIGN PATENT	T DOCUME	NTS			
	Document Number	Date	Country	Class	Sub- Class	Trans- lation
CA	98/03559	01/29/98	WO			
СВ	98/44011	10/08/98	wo			
СС	01/12641 (corresponds to US 6,437,161; US 6,919,412; US 6,838,563; US 6,699,948; US 6,787,498)	02/22/01	wo			
CD	01/12687 (corresponds to US 6,911,516)	02/22/01	WO			
CE	01/96417 (corresponds to US 6,924,248)	12/20/01	WO			
CF	01/96418 (corresponds to US 7,094,724)	12/20/01	wo	I		<u> </u>
CG	03/024982 (corresponds to US 2004/0242880)	03/27/03	wo			
СН	2004/056482 (corresponds to US 2006/0116491)	07/08/04	wo			
CI	2004/056878 (corresponds to US 2005/0282979)	07/08/04	wo			
	OTHER (Including Author, Title	e, Date, Perti	nent Pages, e	tc.)		
CJ	W. Frieseleben, "Über eine neue 576 (1963)	Fulven-Synt	these [1]," <u>Ar</u>	ngew Ch	i <u>em</u> ., Vol	. 75(12), p
CK	L. Brandsma, Preparative Polar Organometallic Chemistry," Springer-Verlag, Vol. 2, p 133-142 (1992)					
CL	J. Michl, Editor, <u>Chemical Reviews</u> , Vol. 100(4), p. 1169-1681 (2000)					
СМ	L. Fieser et al., <u>Lehrbuch der Organischen Chemie</u> , Kapitel 33, p. 921-941, Weinheim (1957)					
CN	S. Pang et al., "Size-Exclusion Chromatographic Assessment of Long-Chain Branch Frequency					
	111codole 110vdei, p. 234-207 (177	 	· · · · · · · · · · · · · · · · · · ·			

L. Wild, "Temperature Rising Elution Fractionation," Advances in Polymer Science 98,

B. Monrabal, "Crystallization Analysis Fractionation: A New Technique for the Analysis of

Branching Distribution in Polyolefins," J. of Applied Polymer Science, Vol. 52, p. 491-499

Examiner Date Considered EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP § 609.

p. 1-47 (1999)

CO

CP

Draw line through citation if not in conformance and not considered.

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Filing Date	Group Art Unit				
June 16, 2005	1796				

		June 16, 2005 1796				
		OTHER (Including Author, Title, Date, Pertinent Pages, etc.)				
	M. Enders et al., "New Chromium (III) Complexes as Highly Active Catalysts for					
D	A	Olefin Polymerization," Organometallics, Vol. 20(24), p. 5005-5007 (2001) XP-				
		001112032				
		S. Bradley et al., "Synthesis and Structure of Amino-Functionalized Cyclopentadienyl Vanadiur				
D :	в 🗀	Complexes and Evaluation of Their Butadiene Polymerization Behavior," Organometallics, Vol				
		21(16), p. 3443-3453 (2002)				
D		G. Kraus et al., "A Method for Characterization of Long-Chain Branched Polymers by				
D		GPC and Intrinsic Viscosity," J. Polymer Sci.: Symposium No. 43, p. 329-343 (1973)				
		M. Pollard et al., "Observation of Chain Branching in Polyethylene in the Solid State and Melt				
D	D	via ¹³ C NMR Spectroscopy and Melt NMR Relaxation Time Measurements," <u>Macromolecules</u> ,				
		Vol. 37(3), p. 813,825 (2004)				
		R. Koopmans, "Extrudate Swell of High Density Polyethylene. Part I: Aspects of Molecular				
D	E	Structure and Rheological Characterization Methods," <u>Polymer Engineering and Science</u> , Vol.				
		32(23), p. 1741-1749 (1992)				
		J. Vega et al., "Small-Amplitude Oscillatory Shear Flow Measurements as a Tool To Detect				
D	F	Very Low Amounts of Long Chain Branching in Polyethylenes," <u>Macromolecules</u> , Vol. 31(11),				
		p. 3639-3647 (1998)				
D	G ├─	P. Wood-Adams et al., "Effect of Molecular Structure on the Linear Viscoelastic				
		Behavior of Polyethylene," Macromolecules, Vol. 33(20), p. 7489-7499 (2000)				
		C. Piel et al., "Structure-Property Relationships of Linear and Long-Chain Branched				
D	H	Metallocene High-Density Polyethylenes Characterized by Shear Rheology and SEC-MALLS,'				
		Macromolecular Chemistry and Physics, Vol. 207, p. 26-38 (2006)				
D)I	W. Kaminsky et al., "Polymerization of Ethene and Longer Chained Olefins by				
		Metallocene Catalysis," Macromol. Symp., Vol. 226, p. 25-34 (2005)				
D	J -	K. Klimke et al., "Optimisation and Application of Polyolefin Branch Quantification by Melt-				
		State ¹³ C NMR Spectroscopy," <u>Macromol. Chem. Phys.</u> , Vol. 207, p. 382-395 (2006)				
	к 📙	S. Bin Wadud et al., "Shear and extensional rheology of sparsely branched metallocene				
		catalyzed polyethylenes," <u>J. Rheol.</u> , Vol. 44(5), p. 1151-1167 (2000)				
D.	т	D. Yan et al., "Effect of long chain branching on rheological properties of metallocene				
D	ւ 🗀	polyethylene," <u>Polymer</u> , Vol. 40, p. 1737-1744 (1999)				
-		F. Stadler et al., "Influence of type and content of very long comonomers on long-chain				
Di	M	branching of ethene-/α-olefin copolymers," <u>Macromolecules</u> , Vol. 39(4), p. 1474-1500 (2006)				
		J. Janzen et al., "Diagnosing long-chain branching in polyethylenes," <u>Journal of</u>				
D	N	Molecular Structure, Vol. 485-486, p. 569-584 (1999)				
xaminer		Date Considered				

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP § 609.

Draw line through citation if not in conformance and not considered.

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Atty Docket Serial No. LU 6144 (US) 10/539,242 **FORM PTO-1449 Applicant** Shahram Mihan et al. INFORMATION DISCLOSURE CITATION Filing Date Group Art Unit June 16, 2005 1796 **OTHER** (Including Author, Title, Date, Pertinent Pages, etc.) C. Gabriel et al., "Analytical and rheological characterization of long-chain branched EA metallocene-catalyzed ethylene homopolymers," Polymer, Vol. 43, p. 6383-6390 (2002) B. Zimm et al., "The Dimension of Chain Molecules Containing Branches and Rings," EB The Journal of Chemical Physics, Vol. 17(12), p. 1301-1314 (1949) H. Barth et al., Modern Methods of Polymer Characterization, Chemical Analysis, Vol. EC 113, New York: Wiley (1991); Table of Contents Hadjichristidis et al., "Well-Defined, Model Long Chain Branched Polyethylene. 1. ED Synthesis and Characterization," Macromolecules, Vol. 33(7), p. 2424-2436 (2000) E. Kokko et al., "Long-Chain Branched Polyethylene via Metallocene-Catalysis: Comparison of EE Catalysts," Contribution in Organometallic Catalysts and Olefin Polymerization by R. Blom et al., p. 335-345 (2001) J. Stange et al., "Rheological behavior of blends from a linear and a long-chain EF branched polypropylene," <u>J. Rheol.</u>, Vol. 49(5), p. 1059-1079 (2005) H. Münstedt et al., "Rheological measuring techniques and their relevance for the molecular EG characterization of polymers," J. Non-Newtonian Fluid Mech., Vol. 128, p. 1-8 (2005) T. McLeish et al., "Molecular constitutive equations for a class of branched polymer: EH The pom-pom polymer," <u>J. Rheol.</u>, Vol. 42(1), p. 81-110 (1998) I. Vittorias et al., "Detection and quantification of industrial polyethylene branching topologies EI via Fourier-transform rheology, NMR and simulation using the Pom-pom model," Rheol. Acta, Vol. 46, p. 321-340 (2007) E. van Ruymbeke et al., "A sensitive method to detect very low levels of long chain branching EJ from the molar mass distribution and linear viscoelastic response," J. Rheol., Vol. 49(6), p. 1-18 (2005)S. Trinkle et al., "Van Gurp-Palmen Plot II-classification of long chain branched EK polymers by their topology," Rheol Acta; Vol. 41, p. 103-113 (2002) D. Lohse et al., "Well-Defined, Model Long Chain Branched Polyethylene. 2. Melt EL Rheological Behavior," Macromolecules, Vol. 35(8), p. 3066-3075 (2002) C. Gabriel et al., "Influence of long-chain branches in polyethylenes on linear **EM** viscoelastic flow properties in shear," Rheol Acta, Vol. 41, p. 232-244 (2002) B. Bersted et al., "Prediction of Rheological Behavior of Branched Polyethylene from Molecular EN Structure," Journal of Applied Polymer Science, Vol. 26, p. 1001-1014 (1981)

B. Bersted, "On the Effects of Very Low Levels of Long Chain Branching on Rheological

Date Considered

Behavior in Polyethylene," J. of Applied Polymer Science, Vol. 30, p. 3751-3765 (1985)

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP § 609.

Draw line through citation if not in conformance and not considered.

Include copy of this form with next communication to Applicant.

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Examiner

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Group Art Unit
1796

	OTHER (Including Author, Title, Date, Pertinent Pages, etc.)
FA	H. Park et al., "Influence of long-chain branching on time-pressure and time-temperature shift factors for polystyrene and polyethylene," Rheol Acta, Vol. 46, p. 153-159 (2006)
FI	C. Gabriel et al., "Influence of molecular structure on rheological properties of polyethylenes," Rheol Acta, Vol. 37, p. 7-20 (1998)
FC	G. Schlatter et al., "Fourier Transform Rheology of Branched Polyethylene: Experiments and Models for Assessing the Macromolecular Architecture," Macromolecules, Vol. 38, p. 6492-6544 (2005)
FI	H Mijnstedt et al. "Influence of molecular structure on rheological properties of
FI	I. Vittorias et al., "Detection of Long-Chain Branching in Polylolefins via Fourier-Transform Rheology and Finite Element Simulations," Macromol. Mat. Eng., p. 115-120 (2007)
FI	G. Georgiou, "Stick-Slip Instability," <u>Polymer Processing Instabilities</u> edited by S. Hatzikiriakos & S. Migler, Dekker, NY, p. 161-206 (2005)
FC	S. Wang et al., "Exploring molecular origins of sharkskin, partial slip, and slope change in flow curves of linear low density polyethylene," <u>J. Rheol.</u> , Vol. 40(5), p. 875-898 (1996)
FF	S. Wang et al., Stick-slip transition in capillary flow of linear polyethylene: 3. Surface conditions," Rheol Acta, Vol. 36, p. 128-134 (1997)
F	Office Action from currently allowed Application Serial No. 10/539,342 with mail date 5/11/06
F.	Response and Amendment from currently allowed Application Serial No. 10/539,342 with mail date 11/2/06
FF	Office Action from currently allowed Application Serial No. 10/539,342 with mail date 1/19/07
FI	Response and Amendment from currently allowed Application Serial No. 10/539,342 with mail date 6/15/07
FN	Notice of Allowability from currently allowed Application Serial No. 10/539,342 with mail date 7/2/07
Fì	Office Action from currently pending Application Serial No. 10/538 540 with mail dat
FC	Response and Amendment from currently pending Application Serial No. 10/538 540
F	Office Action from currently pending Application Serial No. 10/538 540 with mail dat
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	GB Office Action from currently pending Application Serial No. 10/538,540 with mail da 10/18/07				
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